

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method, comprising:
 - forming a first via dielectric layer on a substrate;
 - patterning the first via dielectric layer to form a via through the first via dielectric layer;
 - forming a photosensitive trench dielectric layer on the first via dielectric layer;
 - patterning the photosensitive trench dielectric layer to form a trench through the photosensitive trench dielectric layer;
 - depositing a conductive material in the via and the trench;
 - forming a top layer on the photosensitive trench dielectric layer; and
 - decomposing, at least partially, the photosensitive trench dielectric layer, decomposed material from the photosensitive trench dielectric layer passing through the top layer, wherein substantially all the patterned first via dielectric layer remains in place after decomposing the photosensitive trench dielectric layer.
2. (original) The method of claim 1, wherein decomposing the photosensitive trench dielectric layer comprises heating the photosensitive trench dielectric layer to a temperature in a range from about 180 degrees Celsius to about 400 degrees Celsius.
3. (original) The method of claim 1, wherein patterning the photosensitive trench dielectric layer comprises directly patterning the photosensitive trench dielectric layer.

4. (original) The method of claim 3, wherein patterning the photosensitive trench dielectric layer comprises patterning the photosensitive trench dielectric layer without using a separate photoresist layer on the photosensitive trench dielectric layer.

5. (previously presented) The method of claim 1, wherein the photosensitive trench dielectric layer is substantially completely decomposed, leaving an air gap between the first via dielectric layer and the top layer.

6. (previously presented) The method of claim 1, wherein the photosensitive trench dielectric layer is partially decomposed, leaving a partial air gap between the first via dielectric layer and the top layer.

7. (previously presented) The method of claim 1, wherein the photosensitive trench dielectric layer comprises a matrix material and porogen material, and decomposing the photosensitive trench dielectric layer comprises removing at least some of the porogen material from the matrix material, leaving a porous trench dielectric layer between the first via dielectric layer and the top layer.

8. (original) The method of claim 1, wherein the photosensitive trench dielectric layer comprises at least one of a photoresist material, a photosensitive polynorbornene material, a photosensitive polysilazane material, a photosensitive benzocyclobutene, a photosensitive polyarylene, a photosensitive polysiloxane, a photosensitive polybenzoxazole, a photosensitive polyborazylene, or a photosensitive fused ring polymer.

9. (original) The method of claim 1, further comprising:

forming a coating layer on the patterned trench dielectric layer;

forming a conductor seed layer on the coating layer; and

forming a cap layer on the deposited conductive material in the via and the trench.

10. – 19. (canceled)

20. (currently amended) A method, comprising:

forming a first via dielectric layer on a substrate;

patterning the first via dielectric layer to form a via through the first via dielectric layer;

forming a first photosensitive trench dielectric layer on the first via dielectric layer a substrate; and

directly patterning the photosensitive trench dielectric layer to form a trench through the photosensitive trench dielectric layer;

forming a second via dielectric layer on the first photosensitive trench dielectric layer;

decomposing, at least partially, the first photosensitive trench dielectric layer; and

wherein decomposing the first photosensitive trench dielectric layer occurs without removing the second via dielectric layer over at least some decomposed portions of the first photosensitive trench dielectric layer and without removing the first via dielectric layer under at least some decomposed portions of the first photosensitive trench dielectric layer.

21. (canceled)

22. (currently amended) The method of claim [[21]] 20, wherein patterning the first photosensitive trench dielectric layer comprises patterning the first photosensitive trench dielectric layer without using an anti-reflective layer.

23. (original) The method of claim 20, wherein the photosensitive trench dielectric layer comprises at least one of a photoresist material, a photosensitive polynorbornene material, a photosensitive polysilazane material, a photosensitive benzocyclobutene, a photosensitive

polyarylene, a photosensitive polysiloxane, a photosensitive polybenzoxazole, a photosensitive polyborazylene, or a photosensitive fused ring polymer.

24. (new) The method of claim 20, further comprising:

 patterning the second via dielectric layer to form a via through the second via dielectric layer;

 forming a second photosensitive trench dielectric layer on the second via dielectric layer;

 forming a top layer on the second photosensitive trench dielectric layer;

 decomposing, at least partially, the second photosensitive trench dielectric layer; and

 wherein after decomposing, at least partially, the first photosensitive trench dielectric layer and after decomposing, at least partially, the second photosensitive trench dielectric layer, portions of the second via dielectric layer remain between air gaps resulting from decomposition of portions of the first and second trench dielectric layers.

25. (new) The method of claim 1, wherein the first via dielectric layer comprises a material that is not photosensitive.

26. (new) The method of claim 1, wherein decomposed material from the photosensitive trench dielectric layer passing through top layer comprises diffusion through portions of the top layer that have not been removed.